PERMIT TO CONSTRUCT

COMPANY NAME: BP WEST COAST PRODUCTS LLC

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FACILITY PERMIT *SECTION H*			
PROCESS 4: FRACTIONATION			
SYSTEM 3: LIGHT ENDS DEPROPANIZER		System Conditions: S13.2, S15.6. S56.1	
DESCRIPTION	DEVICE ID NO.	Emissions And Requirements	CONDITIONS
ABSORBER, MDEA, RPV 3045, HEIGHT: 55 FT; DIAMETER: 3 FT ***A/N ~~460571~~ 511728***	D292		
TOWER, DEPROPANIZER, RPV 3170, HEIGHT: 114 FT 6 IN; DIAMETER: 7 FT 6 IN ***A/N ~~460571~~ 511728***	D293		
ACCUMULATOR, RPV 3171, DEPROPANIZER OVERHEAD, HEIGHT: 21 FT; DIAMETER: 7 FT ***A/N ~~460571~~ 511728***	D296		
TANK, FLASH, RPV 3172, LED FEED, HEIGHT: 25 FT; DIAMETER: 8 FT ***A/N ~~460571~~ 511728***	**D297**		
COMPRESSOR, RW 009 08732, NORTH LED VAPOR FEED ***A/N ~~460571~~ 511728***	D299		
COMPRESSOR, RW 010 08731, SOUTH LED VAPOR FEED, WITH PACKED GLANDS ***A/N ~~460571~~ 511728***	D300		
POT, RPV 5454, REBOILER CONDENSATE, HEIGHT: 2 FT 6 IN; DIAMETER: 2 FT ***A/N ~~460571~~ 511728***	D301		
FUGITIVE EMISSIONS, MISCELLANEOUS ***A/N ~~460571~~ 511728***	D2477	HAP: (10) [40CFR 63 Subpart CC, #5A-6-23-2003]	H23.3

PROCESS 21: AIR POLLUTION CONTROL PROCESS				
SYSTEM 3: HYDROCRACKER FLARE SYSTEM				S58.4, S31.10
FLARE, ELEVATED WITH STEAM INJECTION, NATURAL GAS, WITH A LIGHT GAS SEAL & 33 STEAM JETS, SERVING AS BACKUP FOR THE UNITS HANDLED BY THE FCCU FLARE, HEIGHT: 161 FT 3 IN; DIAMETER: 2 FT 6 IN WITH ***A/N: ~~502191~~ 511727*** BURNER, JOHN ZINK, MODEL STF-S-30	C1308	D474	CO: 2000 PPMV (5) [RULE 407, 4-2-1982] ; PM: 0. 1 GRAINS/SCF (5) [RULE 409, 8-7-1981]	D12. 15, D323.1, E193.3, E193.25, H23.12, H23.29, I1.1
DRUM, FLARE KNOCKOUT, RPV 3212, LENGTH: 12 FT; DIAMETER: 10 FT ***A/N: ~~502191~~ 511727***	D1309		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
DRUM, WATER SEAL, RW 7002, LENGTH: 40 FT, DIAMTER: 14 FT ***A/N: ~~502191~~ 511727***	D2804			
VESSEL, AUTOPUMP, HCU FLARE, RW 6878-289.09, DIA: 1 FT, HEIGHT: 3 FT 11 IN ***A/N: ~~502191~~ 511727***	D2867			
VESSEL, AUTOPUMP, HCU FLARE, RW 6879-289.09, DIA: 1 FT, HEIGHT: 3 FT 11 IN ***A/N: ~~502191~~ 511727***	D2868			
MIST ELIMINATOR, RPV-3214, LENGTH: 28 FT 6 IN; DIAMETER: 12 FT ***A/N: ~~502191~~ 511727***	D1310			
VESSEL, SEPARATOR, RPV 3213, STEAM, HEIGHT: 4 FT; DIAMETER: 2 FT ***A/N: ~~502191~~ 511727***	D1311			
DRUM, RPV 3215, OIL ELIMINATOR, HEIGHT: 6 FT; DIAMETER: 5 FT ***A/N: ~~502191~~ 511727***	D1312			
FUGITIVE EMISSIONS, MISCELLANEOUS ***A/N: ~~502191~~ 511727***	D2544		HAP: (10) [40CFR 63 Subpart CC, #5A, 5-25-2001]	H23. 3

BACKGROUND:

Application 511728 was submitted for the modification of Light Ends Depropanizer (LED) Unit (Process 4, System 3) to replace the current atmospheric pressure relief valve (PRV) on the LED feed flash drum, D297, with a new PRV connecting to the hydrocracker flare system. This project is associated with liquid overfill mitigation (LOM) measures to reduce the risk of overfilling specific vessels located within the refinery.

In addition to the PRV connection to flare mentioned above, there will be some minor instrumentation modifications to the LED tower (D293) and the reboiler in order to improve liquid level indication reliability.

Application 511727 was submitted for the modification of the hydrocracker flare system to connect additional tie-in of the above PRV to the system flare header.

Permit history

The permit histories for the above process unit and the flare are shown in the following table.

Table 1

A/N	Previous Permits	Date	Permitting & Emissions History
Light Ends Depropanizer Unit - Process 4, System 3			
511728	460571/ F88790	2/06/07	Conversion of amine from DEA to MDEA
	458603/ F87205	1/30/07	Replacement of PRV
	435116/ F79735	2/01/06	Admin change
	395787/ F50871	3/28/02	Change of ownership from Arco to BP
	147043/ M57587	6/19/87	Adding pumps, heat exchanger and a compressor
	A39781/ P19899	4/24/67	Adding caustic /water scrubber, tank and pumps
	A11636/ A12347	3/06/62	Initial construction permit of LED Unit
Hydrocracker Flare - Process 21, System 3			
511727	502191 PC	8/26/10	PRV tie-ins from HCU
	488607 PC	6/2/09	To serve as a backup to FCC flare
	484939 PC	9/30/08	Adding autopumps
	458600 PC	3/23/07	Connecting to Flare Gas Recovery System
	458604 PC	1/30/07	Adding PRV from Light Ends Depropanizer Unit
	395738/ F50716	3/27/02	Change of ownership from ARCO to BP
	A52686/ P35192	9/29/69	To serve the Mid-Barrel Disulfurizing Unit
	A37799/ P24036	1/18/68	Initial construction permit

COMPLIANCE RECORD REVIEW

A check of the AQMD Compliance Database for the compliance activity of this facility from 9/01/08 to the present indicated that there were no specific violations reported for the Coker Gasoline Fractionation Unit and the Hydrocracker Flare.

PROCESS DESCRIPTION

The Light Ends Depropanizer Unit

The light ends depropanizer (LED) unit was constructed in 1961 to recover C4 and heavier hydrocarbons from various vapor and liquid streams from north area units and liquid from the superfractionation area. The collected gases enter a feed flash drum, are compressed by the south LED Vapor Feed compressor and charged to the Depropanizer Tower. The depropanizer tops, C3 and lighter, after caustic treating are routed to the ethylene unit, hydrogene unit and the fuel gas system in approximately equal quantities. This treated gas can also go to the refinery vapor recovery system. The liquid bottoms of the tower are transferred to the superfractionation unit for further process.

Currently, the pressure relief valve 27PSV5031 located on the LED feed flash drum (D297) protects the overpressure of the unit. Any discharge from this valve relieves to the atmosphere. The proposed modification to this unit includes the replacement of the atmospheric relief valves with a new relief valve. During emergency conditions, hydrocarbon vapors in this unit will be released to a unit relief header leading to the knockout drum. From this drum, the vapors will be routed to the existing Hydrocracker Flare system. Liquid from the knock out drum will be cooled before it is sent to the existing gasoline slop tank.

Hydrocracker Flare System

The Hydrocracker Flare (HCF) receives process gas and emergency vent gas from a variety of processes/systems at the refinery. The HCF was installed in 1968 in connection with expansion program at that time. This is an elevated flare, which is designated under Rule 1118 as a general service flare. It is equipped with natural gas fired pilots (3 pilots with a flow rate of 2.75 scfm or 165 scfh). The HCF and the FCC flare are interconnected so that each will serve a good part of the refinery north area when the other unit is shut down for service. Gases vented to the HCF are mostly low molecular weights with high hydrogen contents. Under normal operating conditions, the HCF serves Jet-Hydrotreater, Mid-Barrel Desulfurization unit, Hydrogen plant, Hydrocracker, three Catalytic Reformer Units, Light Gasoline Hydrogenation unit, DEA Regeneration systems, LPG Recovery systems, and the Liquid Petroleum Gas Drying facilities.

During the FCC flare shutdown, this flare serves several units in the north part of the refinery. The HCF was designed for a relief load of 417,000 lb/hr @ 5.7 MW. The new relief devices on the LED feed flash drum will be designed to vent to the HCF only during an emergency case. There will be no routine venting from the new PRV associated with this unit to the flare. This LED feed flash drum is subject to relief based

on Hydrocracking Unit power failure causing system overpressure. The new tie-in will prevent the existing atmospheric venting of the relief valve during upset events. Details of the flare analysis are shown in Attachment 1.

During normal conditions, the Light Ends Depropanizer unit operates 24 hours per day, 7 days per week and 52 weeks per year.

The Hydrocracker Flare System is under variance coverage (Case No. 5357-36), from the requirements of flare gas monitoring, under Rule 1118. Rule 1118 requirements include continuous or semi-continuous monitoring of flare gas for total sulfur content, higher heating value, and flow rate. Condition I1.1 of the Title V permit addresses compliance with the requirements of this variance.

This flare was chosen for the above tie-ins because of the proximity to connected equipment and the ability to coordinate shutdown of the flare with equipment vented to the flare. Most importantly, this flare will adequately handle the worst possible discharge rate of 56,053 lb/hr from the HCU including the proposed tie-ins, D297, when the unit has a power failure. The attached flare analysis showed that this potential relief is not part of the common failure scenario (e.g. power, cooling tower, steam failure or fire); therefore, the loads from the additional new PSVs is not additive to the other fire circles nor any other flaring event associated with the HCU flare. As a result, there will be no impact on the capacity of the flare.

Other design criteria are also satisfied general requirements for a flare:

- Flare tip gas velocity – the flare tip velocity for a release from proposed PRV is at Mach 0.044 which is well below the manufacturer's recommended maximum of Mach 0.8.
- Back pressure - the calculated back pressure of 42.6 psig at this new PRV during a capacity release will not affect the capacity of any other relief valve in the Coker flare system.
- Thermal radiation - the maximum thermal radiation resulting from this PRV release is 397 btu/hr ft2 at 185 ft from the flare. This radiation level is well below the API recommended maximum radiation level of 1500 Btu/ft2 hr, for areas where emergency action lasting 2 to 3 minutes. They might allow personnel entering without shielding but with appropriate clothing.
- The flare KO drum and pump are adequate to handle the additional vapor and liquid flows - the expected release for all the vapor relief valves listed above is much less than the flare capacity, the flare KO drum is adequate to handle the releases.

EMISSIONS CALCULATION:

Fugitive emissions are the main air contaminants concerned in the proposed modification of the LED Unit. There will be an insignificant increase (0.04 lb/day) in VOC emission

as a result of the modification as listed in Table 2 below. Reference Appendix A shows the fugitive count and VOC emission calculations.

The flare is also a source of emissions during routine or emergency venting. BP has stated that the proposed modification to the LED unit as part of this project will not result in an increase in flaring activity. Therefore, it will be assumed that there are no emission changes for the Hydrocracker Flare. Table 2 below summarizes the emissions of the proposed project. Details of the flare emissions are found in Appendix A.

Table 2

Emissions	LED Unit (Baseline lb/yr)	LED Unit Net change (lb/yr)	HCU Flare (Baseline lb/dy)
VOC	16,179 (or 44.94 lb/dy)	14 (or 0.04 lb/dy)	Fug. Emis.: 10.18 Combustion: 10.46
NOx			12.96
CO			63.6
PM10			6.00
SOx			75.36

RULE REVIEW

Part 1 District Rules

Rule 212 - Standards for Approving Permits

The proposed modification to the Light Ends Depronanizer Unit meets all criteria in Rule 212 for permit approval. The modification is designed so that the unit can emit a lower emission level during emergency situations.

The replacement of atmospheric PRV with enclosed PRV does not constitute a significant project because 1) the modified permit unit is not located within 1000 feet of a school; 2) the estimated emission increase will not exceed paragraph (g)'s threshold; 3) the modified permit unit does not have an increase cancer risk greater than, or equal to, one in a million (1x10-6) during a lifetime of 70 years or pose a risk of nuisance.

Rule 401 & 402 - Visible Emissions & Nuisance

Visible emission violations and public nuisance complaints associated with the above project are not expected under normal operating conditions.

Rule 467 - Pressure Relief Devices

The new pressure relief valves (PRV) on the feed surge drum are the emergency pressure relief valves. PRVs to relief overpressure condition are exempt from this rule as specified by paragraph (g)(3). Therefore, this rule is not applicable to the proposed PRV. However, these new PRV will be subject to the applicable inspection, maintenance and recordkeeping requirements specified by Rule 1173.

Rule 466.1 - Valves and Flanges

The new valves and flanges will be equipped BACT even when BACT is not required, and subject to the applicable inspection, maintenance and recordkeeping requirements specified by Rule 1173. The permit unit is expected to comply with this rule.

Rule 1118 - Control of Emissions from Refinery Flares

1118(c)(1)(A) requires a pilot flame to be present at all times - Condition D12.15 currently listed on the facility permit requires the installation of a thermocouple to indicate the presence of a pilot flame.

1118(c)(1)(B) requires the flare to be operated in a smokeless manner - Condition D323.1 listed on the facility permit requires specific remedial actions to be taken in the next event that visible emissions are observed from the flare.

1118(c)(1)(C) requires an annual leak survey of all pressure relief devices connected to the refinery flare - The facility is expected to comply with this requirement. Compliance will be determined by the quarterly report that the facility is required to issue according to 1118(i)(5).

1118(g) defines the monitoring and recording requirements - BP has submitted a Flare Monitoring and Recording Plan that is consistent with the Rule requirements prior to the Rule amendment on 11/4/05.

Rule 1123 - Refinery Process Turnarounds

The refinery is subject to the requirements of this rule during a process turnaround. BP refinery is required to submit a compliance plan to the AQMD for review and approval if the refinery uses inert gases or vacuum eduction in the process turnaround. Since the process will not undergo turnaround at this time, this rule is not applicable to the process unit. The permit unit is expected to comply with this rule in future process turnarounds.

Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

The process is equipped with valves, flanges, pumps, pressure relief devices (PRDs), drains, diaphragrams, hatches, sigh-glasses and meters in VOC
service. Therefore, these components are subject to the following applicable requirements:
Leak standards: the new components will be equipped with BACT even when BACT is not required; hence, they are expected to comply with the requirements specified in this paragraph.
Identification: all new major components (>4 in valves and PRDs and >5 HP pumps) will be identified in Piping and Instrumentation (P&ID) flow diagrams.
Inspection: BP will continue to inspect the components in accordance to the applicable requirements specified by this paragraph.
Maintenance: BP will continue to repair or replace components in accordance to the time table specified by Table 2 of this paragraph.
Atmospheric PRDs: all atmospheric PRDs in the process unit are listed in the compliance plan (A/N 499358) approved on August 13, 2009. Compliance with the monitoring requirements is expected.
Recordkeeping and reporting: BP will continue keeping records and report of all leaks, repairs and re-inspections in accordance to the applicable requirements specified by this paragraph.
BP is expected to comply with all applicable requirements of this rule.

Reg. XIII - New Source Review:

This regulation applies to any new, modified or relocated source which results in an emission increase of any non-attainment air contaminant, any ozone depleting compound, or ammonia.

Rule 1303(a)(1) – BACT and 1303(b) - Offset:

The proposed replacement of atmospheric pressure relief valves with the pressure relief valves vented to the control system will result in an insignificant emission increase. BACT, modeling and emission offset are not required.

The previous A/Ns and NSR emissions of the process unit and the flare are required to be adjusted as shown in the Table 3 below. (Details can be found in the Appendix A)

Table 3 - NSR Emissions

Equipment	NSR ROG Emissions – lb/day	
	Previous	Current
LED	~~A/N 460571: 41.52*~~ A/N 460571: 44.98	A/N 511728: 44.98

* This was mistakenly calculated without compressor components. See details in Appendix A

Equipment	NSR Emissions			
	Previous		Current	
HCU Flare	~~A/N 488607: 0~~ A/N 488607:		A/N 511727:	
	lb/dy	lb/hr	lb/dy	lb/hr
ROG	20.64	0.86	20.64	0.86
CO	63.60	0.65	63.60	0.65
NOx	12.96	0.54	12.96	0.54
PM10	6	0.25	6	0.25
SOx	75.36	3.14	75.36	3.14

Reg. XIV - New Source Review of Carcinogenic Air Contaminants

This rule requires a permit applicant to assess the cancer risk due to the cumulative emission impacts of new/modified sources in the facility.

The proposed modification will result in an emission increase of 0.04 lb/day of VOC. The cancer risk and hazard index thresholds are not expected to be exceeded at any receptor location. No health risk analyses are required.

Reg. XVII - Prevention of Significant Deterioration (PSD)

This regulation applies to pollutants which have attained the ambient air standards in South Coast Air Basin. These include NO_2, SO_2 and lead. This project does not result in an increase in emissions of these pollutants and therefore it is not subject to the requirements of this regulation.

Reg. XX – Regional Clean Air Incentives Market (RECLAIM)

BP Carson refinery is a cycle II RECLAIM facility. There are no emissions of NOx and SOx associated with PRVs replacement. Furthermore, the flare is exempt from the monitoring, reporting, and recordkeeping requirements of this rule. Therefore, this regulation is not applicable to the proposed modification. The facility is expected to continue complying with the requirements of this regulation.

Reg. XXX - Title V Operating Permits

Rule 3002 requires that no person shall construct, modify, or operate equipment located at a Title V facility without first obtaining a Title V permit or permit revision that allows the construction, or modification. This facility is subject to and complies with Title V requirements. On September 1, 2009, BP's initial Title V permit became effective, and has been issued revisions.

This project is considered to be a "De Minimis Significant Revision" which means any Title V revision where the cumulative emission increase of non-RECLAIM pollutants or hazardous pollutants from this permit revision during the term of the permit is not greater than any of the emission threshold levels listed in this rule section. The proposed Title V permit revision will be submitted to EPA for a 45-day review.

Part 2 State Regulations

California Environmental Quality Act (CEQA)

This proposed modification is not a significant project. Therefore, preparation of a CEQA document is not required.

Part 3 Federal Regulations

40 CFR Part 60 Subpart A **General Provisions**

§60.18(c)(1) requires flares to be operated with no visible emissions. Condition D401.1 currently requires specific remedial actions to be taken in the event that visible emissions are observed from the flare. Compliance with this section is expected.

§60.18(f)(2) requires the presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. Condition D12.15 currently on the permit requires the installation of a thermocouple to indicate the presence of a pilot flame. The facility is therefore in compliance with this section.

40 CFR Part 60 Subpart J **Standards of Performance for Petroleum Refineries**

§60.104(a)(1) limits the H2S concentration of fuel gas burned in combustion devices to be no more than 160 ppmv. The process upset gases that are combusted in a flare are exempt.

Refinery flares in the South Coast Air Basin are only allowed to operate during

periods of process upsets or emergency malfunctions, the conditions that are exempt from the 0.1 gr/dscf of H2S limit specified by this subpart.

40 CFR60 Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries.

The process unit is subject to the applicable requirements of this subpart.
§60.592(a) requires new devices to comply with section §60.482-1 through §60.482-10.
§60.482-2 defines the inspection and maintenance requirements for pumps in light liquid service. The pumps will also be sealless or tandem sealed that comply to BACT of < 500 ppmv ROG emissions. This section is not applicable since there will be no pumps to be installed for this project.
§60.482-3 requires compressors to be equipped with a seal system that includes a barrier fluid. This section is not applicable since there is no compressor to be installed in this project.
§60.482-4 defines the requirements for pressure relief devices in gas/vapor service. This section exempts the PRVs being connected to the control equipment. Since the proposed PRD will be connected to the control equipment, it is exempt from this section requirement.
§60.482-5 defines the requirements for sampling connection systems. This section is not applicable to this project as there will be no sampling systems to be installed.
§60.482-6 requires each open ended valve or line to be equipped with: a cap, blind flange, plug, or a second valve that will be sealed at all times. These standards do not apply as the project will not involve with open ended valve or line.
§60.482-7 defines the inspection and maintenance requirements for valves in light liquid service. The valves to be installed will be included in the facility inspection and maintenance program. Compliance with this section is expected.
§60.482-8 defines the requirements for pumps and valves in heavy liquid service. The new components in heavy liquid service will be equipped with BACT complying to a ROG emission limit of < 500 ppmv, and will be included in the facility inspection and maintenance program. The components are expected to comply with these standards.
§60.482-9 provides allowances for delaying the repair of leaking components. Any repairs of leaked components will be subject to the time limits specified by AQMD Rule 1173 – Table 2 or in this section, whichever is more stringent. The components are expected to comply with the requirements.

§60.482-10 requires flares (control device) to comply with the requirements of §60.18. This section is not applicable since the proposed project does not involve with the flare operation.

BP refinery is expected to continue demonstrating the compliance with all applicable requirements of this subpart.

40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

§63.640(c)(4) indicates that this subpart applies to equipment leaks from petroleum product refining units. This process unit is, therefore, subject to the equipment leak standards for existing sources as specified in §63.648. ***§63.648*** requires devices subject to this subpart to comply with the equipment leak requirements of 40 CFR60 Subpart VV.

The ability to comply with the requirements of 40 CFR60 Subpart VV is described in the evaluation of 40 CFR60 Subpart GGG in the evaluation. In general, the equipment leak inspection and monitoring requirements of Rule 1173 are more stringent, but pertinent requirements of this regulation have been incorporated into BP's Inspection and Monitoring Program for fugitive emissions.
BP is expected to be in compliance with requirements of this regulation.

CONCLUSION/ RECOMMENDATION:

The above equipment will operate in compliance with all applicable rules and regulations of the District. Permits to Construct are recommended to be issued to BP Carson Refinery subject to the following conditions:

Conditions:

Light Ends Depropanizer Unit: S13.2, S15.6, **S56.1,** H23.3
Hydrocracker Flare: S31.10, S58.4, D12.15, D323.1, E193.3, E193.25, H23.12, H23.29, H23.3, I1.1

System Conditions

S13.2 All devices under this system are subject to the applicable requirements of the following rules and regulations:

CONTAMINANT	RULE	RULE/SUBPART
VOC	DISTRICT RULE	1123

[RULE 1123, 12-7-1990]

S15.6 THE VENT GASES FROM ALL AFFECTED DEVICES OF THIS PROCESS/SYSTEM SHALL BE VENTED AS FOLLOWS:

_All sour gases shall be directed to amine contactor system located within this system.
_This process/system shall not be operated unless the amine contactor system is in full use and has a valid permit to receive vent gases from this system.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-OFFSET, 5-10-1996]

S31.10 THE FOLLOWING BACT REQUIREMENTS SHALL APPLY TO VOC SERVICE FUGITIVE COMPONENTS ASSOCIATED WITH THE DEVICES THAT ARE COVERED BY APPLICATION NUMBER(S) 454566, 454567, 454568, 458598, 458600, 458610, 459257, 459284 & 459286:

_The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The valves and flanges shall be categorized by size and service. The operator shall submit a listing of all new non-bellows seal valves which shall be categorized by tag no., size, type, operating temperature, operating pressure, body material, application, and reasons why bellows seal valves were not used
_All new valves in VOC service, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in Rule 1173, shall be bellows seal valves, except as approved by the District, in the following applications: heavy liquid service, control valve, instrument piping/tubing, applications requiring torsional valve stem motion, applications where valve failure could pose safety hazard (e.g., drain valves with valve stems in horizontal position), retrofits/special applications with space limitations, and valves not commercially available
_All new valves and major components in VOC service as defined by Rule 1173, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in Rule 1173, shall be distinctly identified from other components through their tag numbers (e.g., numbers ending in the letter "N"), and shall be noted in the records
_All new components in VOC service as defined in Rule 1173, except valves and flanges, shall be inspected quarterly using EPA reference Method 21. All new valves and flanges in VOC service, except those specifically exempted by Rule 1173, shall be inspected monthly using EPA Method 21
_If 98.0 percent or greater of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv for two consecutive months, then the operator may change to a quarterly inspection program with the approval of the District
_The operator shall revert from quarterly to monthly inspection program if less than 98.0 percent of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv
_All new components in VOC service with a leak greater than 500 ppmv but less than 1,000 ppmv, as methane, measured above background using EPA Method 21 shall be repaired within 14 days of detection. Components shall be defined as any valve, fitting, pump, compressor, pressure relief valve, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173
_The operator shall keep records of the monthly inspection (quarterly where applicable), subsequent repair, and re-inspection, in a manner approved by the District. Records shall be kept and maintained for at least five years, and shall be made available to the Executive Officer or his authorized representative upon request
_All open-ended valves shall be equipped with cap, blind flange, plug, or a second valve
_All pressure relief valves shall be connected to a closed vent system or equipped with a rupture disc and telltale indicator
_All pumps shall utilize double seals and be connected to a closed vent system
_All compressors to have a seal system with a higher pressure barrier fluid.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-OFFSET, 5-10-1996]

S56.1 VENT GASES FROM ALL AFFECTED DEVICES OF THIS PROCESS/SYSTEM SHALL BE DIRECTED TO A GAS RECOVERY SYSTEM, EXCEPT FOR VENTING FROM THOSE EQUIPMENT SPECIFICALLY INDICATED IN A PERMIT CONDITION, AND FOR THE FOLLOWING VENT GASES WHICH MAY BE DIRECTED TO A FLARE:

1) VENT GASES DURING AN EMERGENCY AS DEFINED IN RULE 1118(B)(2) ;

2) VENT GASES DURING STARTUPS OR SHUTDOWNS AS DEFINED IN RULE 1118(B)(21) AND (B)(19), RESPECTIVELY, PROVIDED THAT ALL FLARES HAVE BEEN OPERATED IN ACCORDANCE WITH FLARING MINIMIZATION PROCEDURES AS DESCRIBED IN RULE 1118(C)(4); AND

3) VENT GAS DUE TO ESSENTIAL OPERATING NEED, AS DEFINED IN _RULE 1118(B)(4)(A) THAT WOULD RESULT IN A TEMPORARY FUEL GAS SYSTEM IMBALANCE, OR AS DEFINED IN RULE 1118(B)(4)(C) THAT WOULD RESULT IN STREAMS THAT CANNOT BE RECOVERED DUE TO INCOMPATIBILITY WITH RECOVERY SYSTEM EQUIPMENT OR WITH REFINERY FUEL GAS SYSTEMS, PROVIDED THAT ALL FLARES HAVE BEEN OPERATED IN ACCORDANCE WITH FLARING MINIMIZATION PROCEDURES AS DESCRIBED IN RULE 1118(C)(4).

THE FLARING MINIMIZATION PROCEDURES AND ANY SUBSEQUENT CHANGES SHALL BE SUBMITTED TO THE DISTRICT AS DESCRIBED IN RULE 1118(C)(3).

THIS PROCESS/SYSTEM SHALL NOT BE OPERATED UNLESS ITS DESIGNATED FLARE(S) AND THE GAS RECOVERY SYSTEM ARE BOTH IN FULL USE AND HAVE VALID PERMITS TO RECEIVE VENT GASES FROM THIS SYSTEM.

Vent gases shall not be released to the atmosphere except from the existing safety devices or relief valves on the following equipment:

Process 1, System 2: 10, 12, 14
Process 1, System 3: 19, 20, 24 to 26
Process 1, System 5: 35, 39, 41, 42, 2726
Process 1, System 6: 43, 49, 57, 58
Process 1, System 7: 59, 60, 61, 62
Process 2, System 1: 74, 77, 2388
Process 2, System 2: 82, 89, 90, 92, 2389
Process 2, System 3: 94, 95
Process 2, System 5: 98, 101, 102
Process 2, System 6: 111, 112, 113
Process 2, System 11: 159, 160
Process 3, System 1: 164 to 167, 170, 172 to 181, 184, 1336 to 1349, 2382, 2387
Process 3, System 2: 186, 188, 189, 191, 196, 199, 201, 204, 1352 to 1355
Process 3, System 4: 241
Process 3, System 6: 242, 245 to 247, 249
Process 3, System 7: 1363
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Process 21, System 4: 1315, 1316, 1319, 1323 to 1325, 1659

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2) – Offset, 5-10-1996

S58.4 HYDROCRACKER FLARE SYSTEM SHALL ONLY BE USED TO RECEIVE AND HANDLE VENT GASES FROM THE FOLLOWING PROCESS(ES) AND SYSTEM(S):

1) LIGHT ENDS DEPROPANIZER (PROCESS: 4, SYSTEM: 3)
2) JET FUEL HYDROTREATING UNIT (PROCESS: 5, SYSTEM: 1)
3) MID-BARREL DESULFURIZER UNIT (PROCESS: 5, SYSTEM: 2)
4) LIGHT GASOLINE HYDROGENATION UNIT (PROCESS: 5, SYSTEM: 4)
5) CATALYTIC REFORMER UNITS (PROCESS: 6, SYSTEM: 1, 2, & 3)
6) HYDROGEN PLANT (PROCESS: 7, SYSTEM 1)
7) HYDROCRACKING UNITS (PROCESS: 8, SYSTEM: 1 & 2)
8) LPG RECOVERY SYSTEM (PROCESS: 10, SYSTEM: 2)
9) LIQUID PETROLEUM GAS DRYING FACILITIES (PROCESS: 10, SYSTEM: 3)
10) MDEA REGENERATION SYSTEMS (PROCESS: 12, SYSTEM: 9 & 10)
11) IF HC FLARE IS BEING UTILIZED TO BACKUP THE FCCU FLARE, FCCU, FCCU GAS PLANT & FCCU GAS COMPRESSION UNIT (PROCESS: 3, SYSTEM: 1, 2 & 3)
12) IF HC FLARE IS BEING UTILIZED TO BACKUP THE FCCU FLARE, PROPYLENE TETRAMER UNIT (PROCESS: 3, SYSTEM: 6)
13) IF HC FLARE IS BEING UTILIZED TO BACKUP THE FCCU FLARE, LIQUIDS RECOVERY UNIT (PROCESS: 4, SYSTEM: 8)
14) IF HC FLARE IS BEING UTILIZED TO BACKUP THE FCCU FLARE, CATALYTIC POLYMERIZATION UNIT (PROCESS: 9, SYSTEM: 2)
15) IF HC FLARE IS BEING UTILIZED TO BACKUP THE FCCU FLARE, FUEL GAS MIX SYSTEM (PROCESS: 10, SYSTEM: 1)
16) IF HC FLARE IS BEING UTILIZED TO BACKUP THE FCCU FLARE, NORTH SOUR WATER TREATMENT UNIT (PROCESS: 12, SYSTEM: 14)

THE FLARE GAS RECOVERY SYSTEM SHALL BE OPERATED IN FULL USE WHEN ANY OF THE ABOVE PROCESS(ES) AND SYSTEM(S) IS IN OPERATION. FULL USE MEANS ONE OF TWO COMPRESSOR TRAINS (PROCESS 21, SYSTEM 10 AND PROCESS 21, SYSTEM 11) IS ONLINE AT ANY GIVEN TIME, EXCEPT DURING PLANNED STARTUPS OR SHUTDOWNS WHEN BOTH COMPRESSORS TRAINS SHALL BE ONLINE.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2) – Offset, 5-10-1996

D12.15 THE OPERATOR SHALL INSTALL AND MAINTAIN A(N) INFRARED / ULTRAVIOLET DETECTOR OR A THERMOCOUPLE TO ACCURATELY INDICATE THE PRESENCE OF A FLAME AT THE PILOT LIGHT.

The operator shall also install and maintain a device to continuously record the parameter being measured.
[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; 40CFR 60 Subpart A, 6-13-2007]

D323.1 THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON A BI-WEEKLY BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE BI-WEEKLY PERIOD. THE ROUTINE BI-WEEKLY INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS.

IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED THAT LAST MORE THAN THREE MINUTES IN ANY ONE HOUR, THE OPERATOR SHALL VERIFY AND CERTIFY WITHIN 24 HOURS THAT THE EQUIPMENT CAUSING THE EMISSION AND ANY ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT ARE OPERATING NORMALLY ACCORDING TO THEIR DESIGN AND STANDARD PROCEDURES AND UNDER THE SAME CONDITIONS UNDER WHICH COMPLIANCE WAS ACHIEVED IN THE PAST, AND EITHER:

1). TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT; OR

2). HAVE A CARB-CERTIFIED SMOKE READER_ DETERMINE COMPLIANCE WITH THE OPACITY STANDARD, USING EPA METHOD 9 OR THE PROCEDURES IN THE CARB MANUAL "VISIBLE EMISSION EVALUATION", WITHIN THREE BUSINESS DAYS AND REPORT ANY DEVIATIONS TO AQMD.

THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:

1). STACK OR EMISSION POINT IDENTIFICATION;

2). DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;

3). DATE AND TIME VISIBLE EMISSION WAS ABATED; AND

4). ALL VISIBLE EMISSION OBSERVATION RECORDS BY OPERATOR OR A CERTIFIED SMOKE READER.
[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 401, 3-2-1984; RULE 401, 11-9-2001]

E193.3 THE OPERATOR SHALL OPERATE AND MAINTAIN THIS EQUIPMENT ACCORDING TO THE FOLLOWING SPECIFICATIONS:

The operator shall comply with all applicable requirements specified in Subpart A of the 40CFR60
[40 CFR 60 Subpart A, 6-13-2007]

E193.25 THE OPERATOR SHALL RESTRICT THE OPERATION OF THIS EQUIPMENT AS FOLLOWS:

_The flare may serve to backup the FCCU Flare only when the FCCU Flare is taken out of service during the planned shutdown periods, and all of the following criteria are met:

_The following units shall not be in operation: Hydrocracker Units (Process 8, System 1 & 2), Hydrogen Plant (Process 7, System 1).

_When the HC Flare is serving as backup to the FCC Flare, only the following units shall relief to the flare:

_Jet Fuel Hydrotreating Unit (Process 5, System 1), Mid-Barrel Desulfurizer Unit (Process 5, System 2), Light Gasoline Hydrogenation Unit (Process 5, System 4), LPG Recovery System (Process 10, System 2), LPG Drying Facilities (Process 10, System 3), Catalytic Reforming Units (Process 6, Systems 1, 2 & 3), MDEA Regeneration Systems No 1 & 2 (Process 12, Systems 9 & 10),

_FCCU, FCCU Gas Plant & FCCU Gas Compression Unit (Process 3, Systems 1, 2 & 3), Propylene Tetramer Unit (Process 3, System 6), Liquid Recovery Unit (Process 4, System 8), Catalytic Polymerization Unit (Process 9, System 2), Fuel Gas Mix Drum System (Process 10, System 1), North Sour Water Treatment Unit (Process 12, System 14).

_For No. 9 Cooling Tower failure scenario, the relief loads shall not exceed the hydraulic capacity of the flare. If requested by District personnel, the operator shall provide analysis, or, if one is not available, perform hydraulic modeling analysis of the relief event to demonstrate compliance with this condition.

_In No. 9 Cooling Tower failure scenario, only the following units shall relief to the flare: FCCU, FCCU Gas Plant & FCCU Gas Compression (Process 3, Systems 1, 2 & 3) and MDEA Regeneration Systems No. 1 & 2 (Process 12, System 9 & 10).

_All other relief events to the flare shall not exceed the smokeless capacity of a flare designed for 417,000 lb/hr for a total of five minutes during two consecutive hours except during periods of startup, shutdown, or malfunction. If requested by District personnel, the operator shall provide analysis, or, if one is not available, perform hydraulic modeling analysis of the relief event to demonstrate compliance with this condition.

_The operator shall not utilize the HC Flare to backup the FCCU Flare for a period greater than 30 days, unless otherwise approved in writing by the Executive Officer.

_The operator shall notify the District a minimum of 10 days before the start of the planned shutdown of the FCCU Flare. This notification shall indicate the estimated duration of the shutdown.
RULE 1303(b)(2)-OFFSET, 5-10-1996]

H23.3 This equipment is subject to the applicable requirements of the following rules and regulations:

CONTAMINANT	RULE	RULE/SUBPART
VOC	DISTRICT RULE	1173
VOC	40CFR60, SUBPART	GGG

[RULE 1173, 5-13-1994, RULE 1173, 2-6-2009, 40CFR 60 Subpart GGG, 6-2-2008]

H23.12 THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
BENZENE	40CFR61, SUBPART	FF

[40CFR 61 Subpart FF, 12-4-2003]

H23.29 THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
SOX	DISTRICT RULE	1118

[RULE 1118, 11-4-2005]

I1.1 THE OPERATOR SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE CONDITIONS AND COMPLIANCE SCHEDULE AS SPECIFIED IN THE VARIANCE DATED JULY 15, 2008, CASE NO. 5357-36, IN ACCORDANCE WITH THE FINDINGS AND DECISIONS OF THE HEARING BOARD OR AS SUBSEQUENTLY MODIFIED BY THE HEARING BOARD. THE OPERATOR SHALL SUBMIT PROGRESS REPORTS AT LEAST SEMI-ANNUALLY, OR MORE FREQUENTLY IF SPECIFIED IN THE FINDINGS AND DECISIONS. THE PROGRESS REPORTS SHALL CONTAIN DATES FOR ACHIEVING ACTIVITIES, MILESTONES OR COMPLIANCE REQUIRED IN THE SCHEDULE OF COMPLIANCE AND DATES WHEN SUCH ACTIVITIES, MILESTONES OR COMPLIANCE WERE ACHIEVED; AND AN EXPLANATION OF WHY ANY DATES IN THE SCHEDULE OF COMPLIANCE WERE NOT, OR WILL NOT BE MET, AND ANY PREVENTATIVE OR CORRECTIVE MEASURES ADOPTED.

The variance (or Order for Abatement) referenced in this condition does not affect federal or citizen enforceability of the underlying SIP approved rules for which the applicant is receiving the variance (or Order for Abatement).

[RULE 3004(a)(10(C), 12-12-1997]

APPENDIX A

Detailed Emissions Calculations

Emissions Calculations

A. Fugitive Emissions for Light Ends Depropanizer Unit

Sources	Nos. of Existing Sources**	# Compnts Removed	# Compts Added	Final Compts Count	Emission Factor (lb/yr)	Net Change in VOC's	After Modif Emission (lb/yr)
Valves							
Sealed bellows-Gas/V & L Liquid	7		6	13	0		
Live loaded w/dual seal syst: Nat gas							
Gas Vapor	136			136	23		3128
Light Liquid	385			385	19		7315
Heavy Liquid							
Pumps Sealess type - LL					0		
Double or Tandem Mech. Seal – LL	5			5	104		520
Single Mech. Seal (HL)					80		
Fittings (flanges, conntrs and others)	1832		9	1841	1.5	14	2762
Process Drains - P-Trap or Seal Pot	18			18	80		1440
Compressor (Gas/Vapor)	**2**			**2**	**514**		**1028***
PRVs	4	-1	1	4	0		
Total ROG emissions	16,179/yr 44.94 lb 30-dy ave					14 lb/yr or **0.04 lb/day**	16,193/yr or **44.98 lb/ 30-day Ave**.

* this component was mistakenly not included in the previous calculations

** Baseline emissions based on previous A/N 458603.

B. Fugitive Component Counts and VOC Emissions for HCU Flare (from reference A/N 484939)

Sources	Nos. of Existing Sources	Emission Factor (lb/yr)	Emission (lb/yr)
Valves			
Sealed bellows-Gas/V & L Liquid	87	0	
Live loaded w/dual seal syst: Nat gas	28	12	336
Gas Vapor	84	23	1932
Light Liquid	21	19	418
Heavy Liquid		3	
Pumps Sealess type - LL		0	
Double or Tandem Mech. Seal – LL	3	104	312
Single Mech. Seal (HL)		80	
Fittings (flanges, connectors and others)	445	1.5	668
Process Drains - P-Trap or Seal Pot		80	
PRVs	2	0	
Total ROG emissions			3666/yr or 10.18 lb/ 30-day Ave.

Combustion Emissions of HCU Flare

No change in emissions from the Hydrocracker Flare System, due to the current modification, is expected. The emissions from this system were quantified under a previous application, A/N 488607, and are repeated below:

Emission	CO (lb/yr)	ROG (lb/yr)	NOx (lb/yr)	PM (lb/yr)	SOx (lb/yr)
HCU Flare	23,156 or 63.6 lb/dy	4,081 or 10.46 lb/dy	4,700 or 12.96 lb/dy	2,164 or 6 lb/dy	27,420 or 75.36 lb/dy